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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,166	06/01/2001	Jeffrey M. Bentley	1955 P 073	9157
26851	7590	12/24/2003	EXAMINER	
ROBERT W. DIEHL 311 S. WACKER DRIVE 53RD FLOOR CHICAGO, IL 60606-6622			RIDLEY, BASIA ANNA	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 12/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/872,166	Applicant(s) BENTLEY ET AL.	
	Examiner Basia Ridley 	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 55-57 and 59-132 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 55-57, 59-79, 82, 84, 86-92, 97-103, 106, 108, 110-116 and 121-128 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>120403</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>091001</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, Species A (as represented by Fig. 1-2) is acknowledged. The reformer reactor of Fig. 1-2 is elected for prosecution to the extent that is limited to Species A, as set forth in Restriction mailed on 25 August 2003.

Claim(s) 80-81, 85, 93-96, 104-105, 109, 117-120 and 129-130 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim.

Claim(s) 131-132 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention.

Further, claim(s) 83 and 107 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic claim. Said claims recite the reactor wherein the flow directions are axially away from the first zone. Therefore said claims are drawn to nonelected Species G or H (as shown in Fig. 6), as set forth in Restriction mailed on 25 August 2003.

Priority

2. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. 120.

Oath/Declaration

3. The oath or declaration is defective because:

It does not identify the mailing address of each inventor. A mailing address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing address should include the ZIP Code designation. The mailing address is required in addition to identification of residence of each inventor, which should include the city and state or foreign country of residence of each inventor. The mailing address may be

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provided in an application data sheet or a supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

Information Disclosure Statement

4. The International Search Report from PCT/US97/14906 mailed on 13 March 1998 and Search Report from EPO mailed on 30 June 1998 cited in the information disclosure statement filed on 10 September 2001 have been considered, but will not be printed on any patent resulting from this application.

5. The information disclosure statement filed on 10 September 2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the following document(s) referred to therein has/have not been considered as to the merits:

- "Catalyst Handbook", 2nd ed., Sections 4.1.1 to 4.11.9, because only copy of Sections 4.11.1 to 4.11.9 was filed in the parent application.

Specification

6. The abstract of the disclosure is objected to because it is too long. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

7. The disclosure is objected to because of the following informalities:

- P13/L16: "Cr₂O₃" should be replaced with --Cr₂O₃--;
- P14/L22: "Fig. 1" should be replaced with --Fig. 3--;
- P19/L3: "All of the boundaries between zones in each of the reactors 60, 76 and 96, are permeable (...)" should be replaced with --All of the boundaries between zones in each of the reactors 10 60, 76 and 96, are permeable (...)--, since all of the boundaries between zones in reactor 10 are also permeable, as described on page 10, lines 21-23.

Appropriate correction is required.

Drawings

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because, following reference characters have both been used to designate the same element:

- in Fig. 2, reference characters "P1" and "18" have both been used to designate the same reactor zone;
- in Fig. 5, reference characters "P3" and "90" have both been used to designate the same reactor zone;
- in Fig. 6, reference characters "96" and "120" have both been used to designate the same reactor zone;
- in Fig. 6, reference characters "P4" and "116" have both been used to designate the same reactant flowpath.

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A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

9. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

- in Fig. 5, “81” and “83” as described on page 17, line 24;
- in Fig. 6, “101”, “103”, “105”, “107” and “109” as described on page 18, line 12-13.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

10. The drawings are objected to because:

- in Fig. 2, reference number “P1” does not indicate a reactant flowpath, as described in specification (P11/L6-15) but rather indicates a reactor zone;
- in Fig. 5, reference number “P3” does not indicate a reactant flowpath, as described in specification (P17/L21) but rather indicates a reactor zone;
- in Fig. 6, reference number “116” does not indicate a partial oxidation vessel, as described in specification (P18/L18-19) but rather indicates a reactant flowpath.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

11. Claim(s) 55-57, 59-62, 64-67, 69-74, 76-77, 79, 82-84, 86-92, 97-103, 106, 108, 110, 112-116, 121, 123 and 125-128 are objected to because of the following informalities:

- in claim 55, line 15, recitation “heat is transferred to (...)” should be replaced with --heat is transferred from the partial oxidation reaction vessel to (...)--;
- in claim 57, line 1, --the three zones comprise-- should be inserted after “wherein”;
- in claim 64, line 1, --the three nested zones comprise-- should be inserted after “wherein”;
- in claim 72, line 1, recitation “the first partition” should be replaced with --the partition--; and in line 3, recitation “between the reaction vessel and the second zone” should be replaced with --between the first zone and the intermediate zone--;
- in claim 73, line 1, recitation “the first partition” should be replaced with --the partition--; and in line 3, recitation “from the first zone into the second zone” should be replaced with --from the first zone into the intermediate zone--;
- in claim 74, lines 3-4, recitations “the first catalyst”, both instances, should be replaced with --the catalyst--;
- in claim 76, line 1, recitation “the first partition” should be replaced with --a first boundary--; in line 2, the recitation “the partition” should be replaced with --the first boundary--; and in line 3, recitation “between the reaction vessel and the second zone” should be replaced with --between the first zone and the zone adjacent to the first zone--;
- in claim 77, line 1, recitation “the first partition” should be replaced with --a first boundary--; and in line 3, recitation “from the first zone into the second zone” should be replaced with --from the first zone into the zone adjacent to the first zone--;

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- in claim 79, lines 1-2, recitation “comprises fourth zone adjacent the third zone”, should be replaced with --comprises a fourth zone adjacent a third zone, said third zone adjacent a second zone;
- in claim 82, line 1, recitation “first and second zones” should be replaced with --first and intermediate zones--;
- in claim 87, line 1, recitation “the first catalyst” should be replaced with --the catalyst--;
- in claim 88, line 1, recitation “the first catalyst” should be replaced with --the catalyst--;
- in claim 89, line 1, recitation “the first catalyst” should be replaced with --the catalyst--;
- in claim 90, line 1, recitation “the second zone” should be replaced with --the intermediate zone--;
- in claim 91, line 1, recitation “the first catalyst” should be replaced with --the catalyst--;
- in claim 92, line 1, recitation “the first partition” should be replaced with --the partition--;
- in claim 97, line 1, recitation “the third zone” should be replaced with --the intermediate zone--;
- in claim 103, line 1, “further comprising a fourth zone adjacent a third zone,” should be replaced with --wherein said zone adjacent to the first zone is a second zone, the reactor further a third zone adjacent said second zone and a fourth zone adjacent a third zone,--;
- in claim 106, line 1, recitation “the first and second zones” should be replaced with --the first zone and the zone adjacent to said first zone--;
- in claim 114, line 1, recitation “the second zone” should be replaced with --the zone adjacent to the first zone--;
- in claim 116, line 1, recitation “the first partition” should be replaced with --the partition--;
- in claim 121, line 3, recitation “in the catalyst of the third zone” should be replaced with --in a catalyst contained in the third zone--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claim(s) 66 and 126 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation “reaction stream flow is primarily outward from the third zone to and through the third zone” in claim 66 is not clear. Neither the drawings, nor the specification show reaction stream flowing from third zone to and through the third zone. Further, since the drawings (e.g. Fig. 1) show outward reactant flow from the first zone through the second zone and further through the third zone, it is not clear if claim 66 should recite “reaction stream flow is primarily outward from the first zone to and through the third zone” or “reaction stream flow is primarily outward from the second zone to and through the third zone”.

Additionally the applicant is advised that if claim 66 is amended to recite “reaction stream flow is primarily outward from the first zone to and through the third zone”, said claim will be a substantial duplicate of claim 67. In that case, should claim 66 be found allowable, claim 67 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim 126 recites the limitations “the means for flowing oxygen”, “the means for flowing fuel” and “the means for cooperating”. There is insufficient antecedent basis for said limitation in

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the claim, as neither claim 113, from which said claim 126 is dependent, or any other preceding claims establish antecedent basis for said limitations.

Double Patenting

14. Applicant is advised that should claim 92 be found allowable, claim 116 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

16. Claim(s) 55-57, 59-79, 82, 84, 86-92, 97-103, 106, 108, 110-116 and 121-128 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim(s) 1-55 of U.S. Patent No. 6,245,303.

Although the conflicting claims are not identical, claims 55-57, 59-79, 82, 84, 86-92, 97-103, 106, 108, 110-116 and 121-128 of the instant application are directed to an invention not patentably distinct from invention recited in claims 1-55 of commonly assigned U.S. Patent No. 6,245,303, because said claims 55-57, 59-79, 82, 84, 86-92, 97-103, 106, 108, 110-116 and 121-128 of the

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instant application recite only the limitations which are recited in claims 1-55 of said commonly assigned U.S. Patent No. 6,245,303.

Conclusion

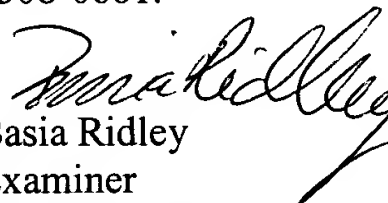
17. In view of the foregoing, none of the claims are allowed.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453. The examiner can normally be reached on Monday through Thursday, from 9:00 AM to 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.


Basia Ridley
Examiner
Art Unit 1764

BR
December 14, 2003